looked normal and healthy with no external indication whatsoever of the presence of these spines. Local fishermen state that the occurrence of sting-ray spines in hammerhead sharks (*Sphyrna* spp.) and saw-fish *Pristis* spp.) is common, indicating that these sharks regularly feed on sting-rays.

Regional Centre of
Central Marine Fisheries
Research Institute,
Mandapam Camp,
June 16, 1971.

R. V. NAIR
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13. *ESOMUS DANRICUS JABALPURENSIS* SUBSP. NOV. FROM PARIAT RIVER NEAR JABALPUR

(*With a text-figure*)

Esomus danricus (Ham. Buch.) is one of the common larvicidal fishes in the rivers and ponds around Jabalpur. In the course of collections eleven specimens which are more slender than *E. danricus* have been collected from Pariat River, a tributary of River Narbada. In view of the striking difference in the height of body, the ten specimens are described here under a new subspecies.

Esomus danricus jabalpurensis subsp. nov.

D 8 (2/6); A 8 (3/5); P 15; V 9; C 19; LI 30-32; tr. 7; GR 3. 17; Vert. 30 (16 + 14).

Body narrow, elongate, dorsal and ventral profiles more or less straight. Depth 6·7-8·7 in total and 5·3-6·5 in standard length. Head 4·4-5·4 in total and 3·5-4·1 in standard length, its height 2/3 in length. Eye 2·8-3·2 in head length; snout bluntly pointed, 2/3 in eye. Mouth small, more or less vertical, lips thin, lower jaw prominent. Maxilla does not reach to anterior margin of orbit. Two pairs of barbels, the rostral pair short reaching to posterior margin of orbit, the maxillary

pair long extending to middle of ventral fins or beyond. Gill openings wide, isthmus narrow, gill rakers thin and somewhat placed apart.

Origin of dorsal fin above middle of total length, 1st ray short, about half in the 2nd, 2nd and 3rd rays longest, 3/4 in head length, base a little more than eye, 1st and 2nd rays entire, the last divided to base, free margin not concave. Pectoral longer than head, situated in the lower half of body, the uppermost ray longest reaching to beyond base of ventral. Ventral origin a little behind two head lengths from tip of snout, shorter than pectoral, the outer ray longest reaching to base of 5th anal ray. Anal insertion below that of 7th dorsal ray, free margin concave, the first three rays entire, the 1st shortest 1/3 in the 2nd, the 2nd about 1/3 in the 3rd and the longest which is a little less than length of head, last ray cleft to base, anal base as long as that of dorsal. Caudal deeply forked, a little longer than head.

Scales cycloid, 30-32 in lateral and 7 in transverse series, 17 predorsal scales. Lateral line incomplete, extends up to 6th scale below pectoral fin as simple tubes. Vertebrae 30: 16 prehaemal and 14 haemal.

Colour: A black band from tip of snout on to caudal fin along the mid-sides being lighter on snout and caudal. Sides silvery, the part above the black band light grey and pale yellow below it. Dorsal fin lightly spotted.

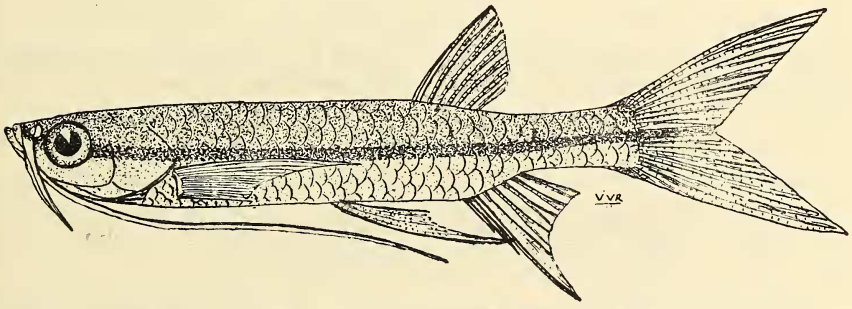

FIG. 1. *Esomus danricus jabalpurensis* subsp. nov. Type, 52 mm total length.

Day (1887, 1889) distinguished two varieties of *E. danricus*, *alta* and *malabaricus* on the basis of difference in the height of body which is $4\frac{1}{2}$ in total length in the former and $5\frac{1}{2}$ in the latter. Hora and Mukerji (1929) stated that this species exhibits a great range of individual variation, especially in the case of barbels, paired fins and lateral band on body. They concluded that various forms described from different localities of India belong to the same species, *E. danricus* in which the lateral line is restricted to 4-6 scales anteriorly; variety *malabaricus* which according to Day is characterised by the absence of lateral line is included in this species. Variety *alta* having a complete lateral line

and greater height has been treated as *E. altus* (Blyth). An examination of more than 50 specimens of *E. danricus* and 10 specimens of the subspecies has shown a good amount of similarity between the two, but revealed a marked difference in the height of body which is 3·8-4·3 in standard length in the former and 5·3-6·5 in the latter; according to Hora and Mukerji the same varies from 3·3-4·8 in *E. danricus* from different localities of India. The least depth of caudal peduncle also shows considerable variation being 6-7 in standard length in the former and 10-10·5 in the latter. A statistical analysis of the biometric data of large number of specimens from different localities of India may perhaps result in recognising more than one subspecies of *E. danricus*. The new subspecies can be easily distinguished by its very narrow body, straight dorsal and ventral profile and very narrow caudal peduncle.

The holotype 40 mm (V. 2060) standard length and the paratypes 38 mm (V. 2061), 37·5 mm (V. 2062) and 36 mm (V. 2063) standard lengths are deposited in the collection of the Central Regional Station, Zoological Survey of India, Jabalpur. Register numbers are given in the parenthesis.

Central Regional Station,
Zoological Survey of India,
Jabalpur,
December 24, 1969.

V. VISWESWARA RAO
H. S. SHARMA

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14. A NOTE ON A HIGH INCIDENCE OF FLEA, INFESTATION IN *RATTUS RATTUS*

Ever since the association between rats, rat fleas and plague was first worked out, the problem of estimating the varying incidence and fluctuations in the flea population has been of primary importance in all their studies.

Occasionally individual rats are seen to harbour unusually large number of fleas. In a rat-flea survey of Madras Presidency (King *et al.* 1929) there were several records of rats—*Rattus rattus* harbouring 29-30 *Xenopsylla cheopis*, the maximum number of fleas of all species on any rat in that survey being 70. Even higher number of fleas have been recorded by the plague commission (1906) on rats dying of plague in Bombay. On one occasion 80 were recovered from a dying rat and in another case about 300 were recorded from three dead rats.